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RS-1 REGULATIONS REVIEW
(LARGE LOTS)

Final Draft Copy

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ACKNOWLEDGEMENTS

The complexity of the single-family large lot problems would be extremely difficult to deal with in the short study time frame without the excellent and valuable research materials already gathered by the City of Vancouver's Planning Department.

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The problem statements and comments from concerned neighbours, the plan service people, the Real Estate and Appraisal people, the Builders, Architects, and other people involved in the construction of single-family residences in Vancouver all played important roles in the formation of the key ideas of this report.

Finally, constructive comments, analyses and recommendations from our architectural sub consultants: Eva Matsuzaki Architect, Stuart Howard Architect, and Paul Ohannesian Architect, have provided additional depth and helped to focus on essential issues.

Perhaps one of the most important side benefits gained by ourselves is the opportunity to meet a large cross sections of the citizens of Vancouver and to view first hand a large quantity of very fine neighbourhoods and homes and to gain invaluable new insights into residential planning that is contextually sensitive.

We hope this report will help to preserve the character of our residential neighbourhoods and provide a vehicle by which new buildings can fit into the existing fabric of the City and still be able to satisfy the requirements of today's and future families.

James K.M. Cheng Architects
September 1, 1987

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

1.0 INTRODUCTION

2.0 PROCESS

2.1 Research

2.2 Findings

2.3 Observations

2.4 Limitations

3.0 CONCLUSIONS

4.0 RECOMMENDATIONS

4.1 Specific Recommendations

4.2 Other Recommendations

5.0 APPENDIXES

Appendix A: Basic Setback Diagram

Appendix B: Interface Zones Diagrams

Appendix C: Height Diagrams

Appendix D: Comparative Datas

Appendix E: Illustrative House Forms

1.0 INTRODUCTION

In recent years over two thousand people voiced their concerns about the changing character of Vancouver's single-family neighbourhoods by writing and calling City Hall and by attending meetings with City staff and City Council. Most objected to imposing, excessively large and bulky houses and illegal suites. In response, Council quickly changed the RS-1 zoning schedule in April 29, 1987 with the intent of improving the neighbourliness of new developments by reducing height, increasing side yards from 5' maximum to 10% of the width of the lot, and adding front and rear yard averaging formulas.

However, these new amendments to the zoning schedule failed to cure the problems of overlook and overshadowing. In some cases it actually created a new kind of problem. By allowing portions of buildings of 12' high or less to intrude into the rear yard to connect with the garage, it permitted a continuously blank wall of some 96' long and 12' high. This provision also greatly diminished the rear yard open space and generally increased site coverage.

In addition, even with reduced heights, maximum 10% side yards and increased rear yards, large bulky houses continued to be built and still overwhelmed their older, smaller neighbours. People continued to complain to City Hall.

At the recommendations of the Planning Department, outside Consultants were engaged to review the current RS-1 schedule and propose new guidelines. Also on the recommendation of the Planning Department, the RS-1 lots were divided into 2 groups; one for lots having a frontage of 33' and less, and one for lots having a frontage of 50' and more. Three other additional sub consultants were engaged to review and comment on the works of the two prime consultants.

This report concentrates strictly on physical aspects of single-family lots having a frontage of 50' and more with an overlap of 40' lots. Illegal suites and heritage legislations are beyond the scope of this report.

2.0 PROCESS

2.1 Research

In order to gain a proper perspective on the problems regarding the large houses, a process of public input was implemented. The Planning Department set up meeting with various residents of different neighborhoods to hear their concerns and to see first hand examples of their complaints.

In addition, real estate and land market people were also consulted as well as builders, designers, and architects. City Planning staff also participated in various workshops concerning heritage, processing, urban design and illegal suites. Meetings with the Mayor and certain members of Council were held to obtain their input and responses.

2.2 Findings

The most common complaints and concerns are summarized as follows:

1. Excessively large houses with great height and bulk overwhelm their neighbours and are unsympathetic to the existing neighbourhood character.
2. Excessively large houses create shadowing problems to the neighbours' gardens.
3. Excessively tall and long houses create overlook (privacy) problems for the neighbours' back yards.
4. Excessively large houses consume much open space for gardens. This is contradictory to the 'Garden City' concept that most Vancouverites seem to treasure.
5. Most of these large houses have little or no major landscape elements (trees and shrubs).
6. Most of these large houses are too boxy, too large, too bulky, use too many materials, possess too few details and often have very different architectural styles than those of the existing neighbors.
7. Excessive paving of the back yards for parking or driveways is at the expense of garden space. When combined with raised back yards, it creates drainage and run off problems.
8. The existing 21' height limit does not work with the City Engineer's proposed new sewer location. If all city sewers are to be relocated to 5' below street level, most bathrooms in basements old and new would require pumping.
9. Front and rear yards averaging is expensive and difficult for ordinary citizens.
10. The existing height limit and building envelope restricts and at times prohibits renovation and expansion of existing houses, thus encouraging demolition, not renovation.

11. The existing RS-1 By-Law does not accommodate sloping sites well. Most steep lots now require relaxation from the Board of Variance. This is costly both in terms of City's processing and staff time as well as time, delays, and frustrations (due to uncertainty) of the applicants.
12. The current RS-1 By-Law limits roof configurations to a single direction therefore restricting building types and innovative designs. At the same time, it has failed to curb long houses with their overlook and shadowing problems.
13. The current RS-1 By-Law has also failed to curb excessively long houses and in many cases has actually increased site coverage.

In addition to the above concerns voiced by the neighbours, builder, real estate people, City staff and various involved professionals, the follow goals were established to complement the problems identified above.

1. **Ease of comprehension**

The new Schedule should be easy to understand by ordinary citizens, building professionals, City staff, etc. People interviewed preferred long, detailed regulations that are specific to short, general intents.

2. **Ease of Implementation and Enforcement**

If the Schedule were clear and precise, it would be easier for the City Staff to implement and enforce. Regulations should be outright rather than discretionary. It would speed up the processing time and the public would have less frustration in trying to understand and comply with the regulations.

3. **Allow for Design Flexibility**

The proposed new regulations should encourage design innovations and allow individual expression while maintaining a compatibility with the existing neighbours.

4. **Future Adoptability**

The proposed new regulations should be able to accommodate future changes in lifestyle, family structure, and shifting age groups in our population.

5. Provide a smooth transition and future compatibility

Recognizing that we are currently in a transition and renewal period, the proposed new regulations should provide a smooth transition from the old to the new. At the same time, new houses should be compatible with the old as well as with each other so that a sense of neighbourhood could be strengthened.

6. Maintaining a 'Garden City' Image

The proposed new regulations should ensure that the 'Garden City' ideal is maintained and perpetuated for future generations to enjoy.

7. Maintain Mandatory Minimum Openspace and Daylight Access

Every household should have a minimum amount of openspace that is unobstructed, not overlooked, and have direct sunlight access.

8. Practical Considerations

- (i) New regulation heights should accommodate renovations to existing housing stock.
- (ii) New regulation heights should work with conventional building methods.
- (iii) New regulation building envelope should accommodate sloping sites.
- (iv) New regulations should not upset the current market values of existing houses and lots.

2.3 Observations

In order to appreciate and more fully understand the meaning of "neighbourliness", analyses of various existing successful neighbourhoods and streetscapes were essential. These neighbourhoods form the context into which we will place our new houses under the new zoning schedule.

Neighbourhoods of varying lot sizes and price ranges were selected for analysis. The following observations were concluded:

1. Streetscape

One of the first things that identify a neighbourhood is its streetscape. This is strongly reinforced by its street trees, sidewalk paving and the front yard setbacks. These elements define the public realm and give the neighbourhood its setting and character.

2. Front Formal Zone

This is the traditional front yard that one maintains for the benefit of all. This is usually the most formal as it is the 'front' that is presented to the public.

It is most successful when the edges between the public realm and the property is clearly defined and the landscaping elements are mature enough to provide a setting for the house to sit in.

3. Front Interface Zone

Traditionally, most of Vancouver's houses have some sort of front porch which announces the front entrance and provides weather protection. These front protrusions provide a gradual transition between the front yard and the house. They also provide an area for social interface where the home owner can interact with neighbours passing by. These front porches break up the facades of many houses and contribute to many successful streetscapes in Vancouver.

Recently, such porches have been included within the allowable Floor Space Ratio (F.S.R.). When interior spaces are at a premium, as often happens with houses on 50 to 60 foot lots, they are the first feature to be deleted. This has helped to contribute to the development of the unarticulated box known as the 'Vancouver Special' which many people have found offensive and not in keeping with their neighbourhood's character.

4. Side Interface Zone

In traditional homes, there is often an extension of a dining room or nook into the side yard. These extensions break up the blank sides and provide visual interest. In addition, the silhouette provides a gradual transition from the roof to the ground.

Again, due to the current By-Law interpretation, such projections are not allowed. (Bay windows or any other projections must be raised and can not be an extension of the floor.) The maximum projection into the side yard is 19". This renders the effective side yards of lots having a frontage of 33' or less to only 20" or less. On wider lots it is insufficient for any meaningful use.

The only way to achieve these projections is to move the side wall back from the side setback line. On the narrower lots, this would mean a loss of valuable frontage and interior space.

5. Rear Interface Zone

Many traditional Vancouver homes also have back porches, sun rooms, and rear decks for private, family activities. They provide a good transition from inside the house to the rear garden or openspace, allowing the inside space to flow and merge with the outdoor spaces. When this happens, a good rear yard or garden is almost always guaranteed.

Unfortunately, when parts of the house are allowed to intrude into the garden to connect to the garage, this interface zone is lost. The remaining openspace is so small, (especially on smaller lots) that often they are paved over because no useful garden could be achieved.

6. Rear Garden (Openspace) Zone

This is traditionally the rear garden where family outdoor activities such as bar-be-que, outdoor games, sun tanning, gardening, etc. are practised. It is the secure area where children can play. Another important function of this openspace is to allow more light into the rear of the house.

Under the current By-Law, one is allowed to project into this zone as long as the building height is 12' or less. In addition, decks are often found on top of these extensions, thus causing shadows into neighbouring yards and overlook problems.

With the loss of open and permeable spaces, there are water run off problems as well as problems related to the appearance of greater bulk, density and congestion.

7. Rear Service Zone

This is traditionally the area where garages, carports and other accessory buildings are located. In most existing houses, these buildings when combined with fencing, provide privacy and security from the lane.

2.4 Limitations

The homes of half of the city's residents and 70 percent of the city land are regulated by the RS-1 zoning schedule. Since they have been developed over a period of 100 years, they vary greatly in size and character.

The lots in Vancouver range from 16' narrow lots to lots of several acres. However, they are under the same zoning schedule with identical requirements.

In different parts of the City, there are different requirements and expectations. For example, 33' lots in a certain area of the East side are more concerned with additional suites to supplement mortgages, while those of the West side are more concerned with their family lifestyles.

Clearly, one zoning schedule would be inadequate to satisfy the diversity of lots. The Planning Department has recognized this and divided the current study into two parts - lots 33' and less, and lots 50' and more.

However, in the past month, we have found that within the given time and scope, we were not able to study adequately lots wider than 100' and deeper than 160', view lots and especially steep lots. Therefore, we are limiting our reports to lots from 40' to 100' and no deeper than 160'. We would recommend that additional studies be carried out for the others.

3.0 CONCLUSIONS

The problems with large new houses exists on many levels crossing all kinds of ethnic and cultural lines as well as economic stratas. It is caused by the people that are moving into or building large houses as well as the people who live in houses surrounding them.

Vancouver, as well as many other North American cities is experiencing new growth and new wealth. Along with this growth and new found wealth, people have new lifestyles. Along with new lifestyles, people have different kinds of requirements of their houses.

The baby boomers, or the so called Yuppie generation, are now having babies. Along with growing family size, people need larger homes to accommodate them. The Yuppie generation has the most disposable income, and is the most educated generation in our history. They often are white collar professionals and two income families. Because of their income and lifestyle, they need larger accommodations for their cars, computers, electronic gadgets and often quarters for live in domestic help.

Vancouver is traditionally an ethnically mixed community. It is even more pronounced right now. New immigrants and people migrating from other provinces bring with them different life styles. It is not uncommon to find extended family members living with them. In-law suites are now quite common.

According to the Planning Department's data, the average family in large new houses has an average of 2.4 children. Typically most of these houses have a minimum of 4 bedrooms and 3 baths upstairs, the traditional living, dining, kitchen, family rooms plus den or library on the main floor, and a nanny or in-law suite plus recreation room in the basement. To accommodate all these requirements, most of these houses are exceeding 4,000 square feet.

Traditionally, people requiring large homes move to neighbourhoods that have large homes on large lots such as Shaughnessey, Oak Ridge, Adera area, etc. However, with the rise the land prices, these large lots have become prohibitively expensive for most buyers. Homes in these area are costing around \$400,000.00 and up. Because of their large lots, the full allowable F.S.R. and building envelopes were seldom tested to the limit.

In other parts of Vancouver, such as the area around 50th & Olser, etc., a lot of smaller houses (one storey bungalows with basements) were built on medium size (50' - 70') lots. They have become economically attractive to buy in order to built larger homes without paying a huge price for the lots. These lots are the smallest lots that can accommodate the buyers's building program. Therefore, they are pushed to the maximum in every respect. When compared to the existing houses in the area, they are often twice as large.

Because of their educational background, these people are city dwellers. They enjoy what a city has to offer in terms of amenities and entertainment. Education for their children is of paramount importance. It is not surprising then to find them congregated around well known schools and in short travel distances to the amenities downtown.

Because of the limited availability of land and the high demand, the pressure is bound to continue. This means that larger houses will continue to be built until the demand is satisfied or all the underutilized lots are consumed.

We have also found that F.S.R. alone, or more specifically above ground F.S.R., will not govern the neighbourliness of the new houses. We have examples of houses having as little as 0.23 F.S.R. above ground which still manage to be large, bulky and unneighbourly.

In existing neighbourhoods, we have found that large houses often coexist very well with smaller neighbors. However, what make them acceptable is that they have good mature landscaping, the houses are usually of similar depths (creating no overlook problem), and they have similar amount of articulations (details, textures, scale, etc.) regardless of their architectural style.

When new buildings are constructed with these qualities, they blend into the neighbourhoods very well. It is therefore our conclusion that:

1. New large homes will continue to be built as long as the demand is there.
2. As the current older generation moves on, more of their post war bungalows will be available for new occupants. Many of these smaller home will be demolished for new and larger homes.
3. F.S.R. alone will not make the new houses compatible.
4. Renovating existing houses will not automatically guarantee a good fit.
5. Having houses identical in height, setback, and shape will not make a good streetscape. (As in Daly City, California). Small variations can express individuality and add richness.
6. Houses need to be of sufficient size so that it could accommodate changes internally without having to be demolished or drastically altering the exterior. (Any time there is new construction in any established neighbourhood, people will be irritated.)
7. People of Vancouver treasures their environment. If we are to preserve our single-family neighbourhoods, we must provide alternate ways to accommodate future residential growth.
8. In terms of being neighbourly, it is the the space in between buildings rather than just the buildings themselves that is most critical.
9. Some of the incompatibility has to do with taste and style and not necessarily with height and bulk, (e.g. Frank Allan's house on Olser.) However, taste and style are extremely difficult to legislate. Any legislation on taste and style would prohibit individual's right to freedom of expression on their own house, we should concentrate on the space that is in between instead.

4.0 RECOMMENDATIONS

Based upon our research, observations and analyses, we have divided our recommendations into two principal areas. The first area is specific recommendations that could be translated into a new amended zoning schedule. The second area deals with the more intangible and long range problems that are beyond the control of individual home owners or single family house builders.

3.1 Specific Recommendations

Site Area

The minimum site area for this schedule shall be 4,000 square feet and having a frontage of no less than 40 feet.

The maximum site area for this schedule shall be 16,000 square feet and having a frontage of no more than 100 feet.

Sites less than 4,000 square feet and having a frontage of less than 40 feet shall refer to the small lot schedule.

Sites larger than 16,000 square feet and having a frontage of more than a 100 feet shall refer to the future special study.

Height

The height of a building shall not at any point protrude above an envelope located in compliance with either the side interface zone lines or the front and rear interface zone lines, and formed by planes vertically extending 24 feet in height and then extending inward and upward at an angle of 45 degrees. The lower apex shall govern the eventual height provided in no case shall the maximum height of the building exceed 35 feet or 2-1/2 storey.

In the case of flat roof buildings, the 1/2 storey shall not be more than 9'-6" in height, measured to the parapet from either the 24' height line or the floor of the attic level, whichever is less, and shall not occupy more than 50% of the frontage. The floor area of the 1/2 storey shall not exceed 50% of the floor area of the floor directly below.

In the case of renovation of an existing building, projections of dormers or other similar elements should be allowed provided they do not exceed 50% of the existing roof area or protrude beyond the 35' height limit. The total floor area shall not exceed 0.6 F.S.R. allowed.

Front Yard

A front yard of 20% of the depth of the lot shall be provided except that:

- (a) on a site where the average front yard of the entire street is 5' more than the normal 20% depth of the lot, the depth of the required front yard shall be that average. (It is our recommendation that the City establishes building lines on blocks that have exceptional setbacks.)

- (b) on sites where the required front yard is less than 20', the Director of Planning shall have the right to relax or increase the required setback having first taken into account of the neighbouring streetscape.
- (b) double fronting lot regulations unchanged.

Side Yard

A side yard of 10% of the width of the lot is required for lots having a frontage of 40 feet or less.

A side yard of 15% of the width of the lot is required for lots having a frontage of 50 feet.

A side yard of 20% of the width of the lot is required for lots having a frontage of 75 feet to 100 feet.

A side yard of a minimum of 20 feet is required for lots having a frontage wider than 100 feet.

The side yard for any lot with a frontage between 40' and 50' shall be interpolated on a sliding scale between 10% and 15%.

Lots between 50' and 70' shall be interpolated on a sliding scale between 15% and 20%.

Corner site regulation remains the same.

Rear Yard

A rear yard with a minimum depth of 50% of the site depth shall be provided except that where the rear yard abuts a lane the minimum required rear yard shall be decreased by the lane width between the rear property line and the ultimate centre line of the lane.

No structures shall be allowed in the rear yard between the rear setback line and the Rear Service Zone except that:

- (a) an unenclosed breezeway may connect the garage to the main house. Such breezeway shall not be wider than 6', or more than 10' in height, and not located within the required side yards. If the breezeway is enclosed, such floor area shall be included in the F.S.R. calculation.

- (b) a one storey building 12 feet or less in height and no wider in aggregate than 60% of the permitted building width and having a depth of no more than 6' may projection into the required rear yard. (This 6' zone is known as the Rear Interface Zone.)

Building line provision remains the same.

Front Interface Zone

A zone of 4' depth extending from one side yard line to the other side yard line in front of the front yard setback shall be established as the Front Interface Zone. Structures such as entry porches, bay windows, etc. are allowed to protrude into the required front yard up to an aggregate width of 50% of the permitted width. Such structures shall be exempt from F.S.R. calculation when not enclosed.

Side Interface Zone

A zone having a depth of 5% of the width of the lot between the front and rear yard setbacks and between the side property line and the side yard setback is established as the Side Interface Zone except that when the width of the lot is less than 50 feet and greater than 40 feet, the Side Interface Zone shall be interpolated between 5% for 50 feet lot and 0% for a 40 feet lot.

Up to an aggregate width of 50% of the permitted building length could be occupied by intruding structures extending from the building envelope. These intrusions could only be one storey in height and could be located either on the first or second floor, but in no case shall such intrusions be allowed to stack directly or overlap on top of each other. Such structure shall be exempt from F.S.R. calculation when not enclosed.

Rear Interface Zone

A zone having a depth of 5% of the depth of the lot protruding into the required rear setback between the side yard setbacks is known as the Rear Interface Zone. Up to an aggregate width of 60% of the width of this zone can be occupied by a one storey structure of no more than 12' in height. Such structure shall be exempt from the F.S.R. calculation when not enclosed.

Rear Service Zone

A zone having a depth of no more than 24 feet from the rear property line stretching from side property line to side property line, shall be established as the Rear Service Zone. Accessory structures such as garages, carports, etc. having a floor area of 580 square feet or 50% of width of the Rear Service Zone, whichever is greater, located in this zone shall be exempt from F.S.R. and site coverage calculation.

Floor Space Ratio

The floor space ratio shall not exceed 0.60. Same as current RS-1 Schedule.

Site Coverage

The maximum site coverage for buildings excluding structures in the Rear Service Zone shall be no more than 35% of the site area.

*(Under the setback requirements, the maximum site coverage would be approximately 28% percent for a 50'x 120' lot excluding garage.)

Front Driveways

The current regulation deals with this aspect satisfactorily.

3.2

Other Recommendations

Additional Studies

Lots beyond 100' frontage, view lots, and extremely steep lots should be further studied with similar approaches.

Public Education and Information

A set of design guidelines and recommendations in the form of a reference booklet should be developed to assist new home builders, design professionals, etc., to better understand the issues of neighbourliness and to encourage them to contribute positively.

Future Policies

The Planning Department should continue to monitor the RS-1 Districts and assess their roles in the future development of the City. In order to preserve and strengthen the single family neighbourhoods, it may be necessary to recognize the fringe areas, such as lots along major thoroughfares, major bus routes, ALRT lines, etc. as edges that protects the single family neighbourhoods. The edges should be identified, perhaps rezoned to increase density in order to relief the pressures to densify the single family districts.

Establish Neighbourhood Improvement Programs

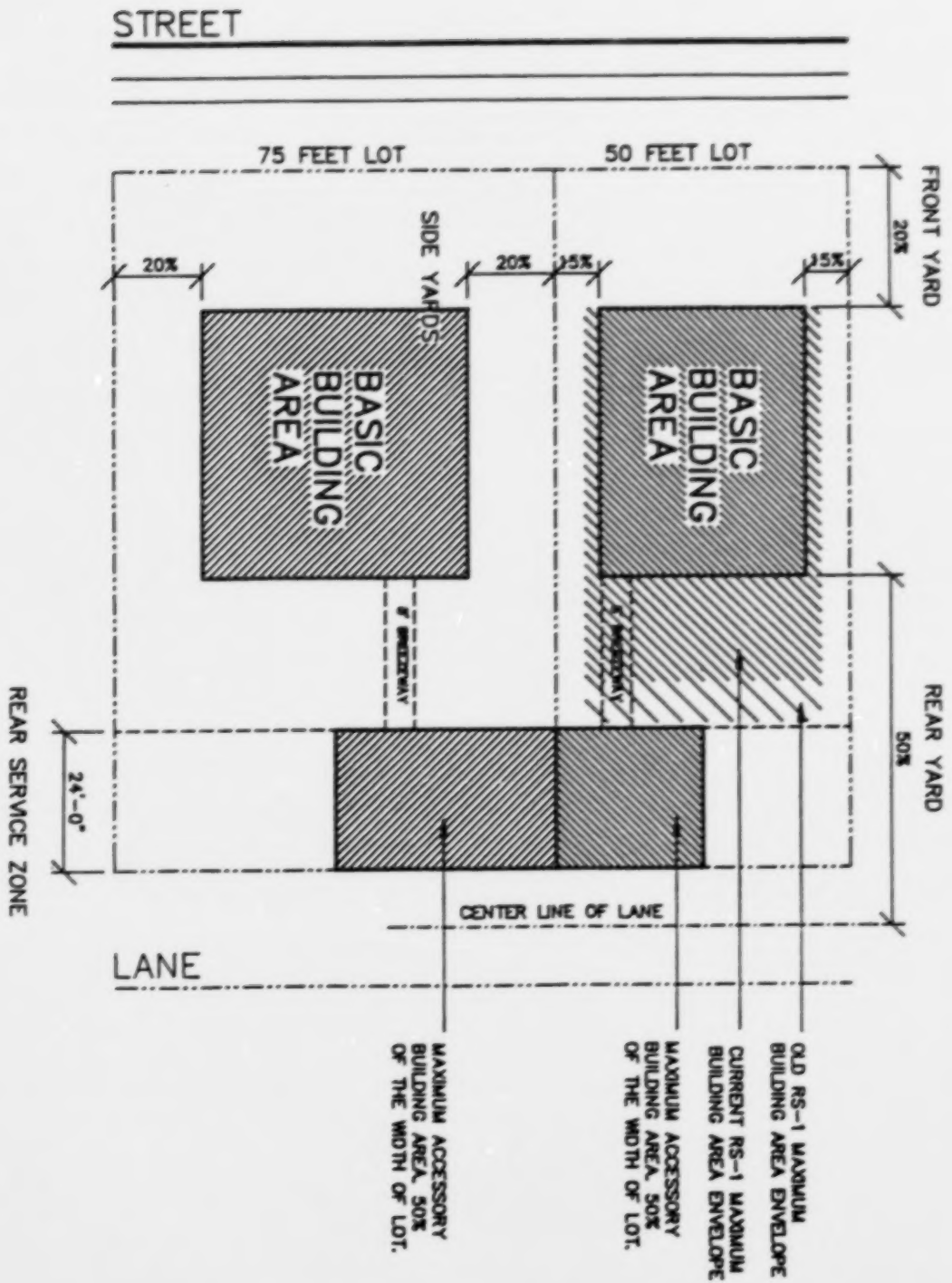
As we have observed in our study, street trees, sidewalks and curbs all contribute to the character of the neighbourhood. The City could help certain neighbourhoods strengthen their character by implementing boulevard planting and sidewalk improvement programs.

Strengthening Neighbourhood Schools

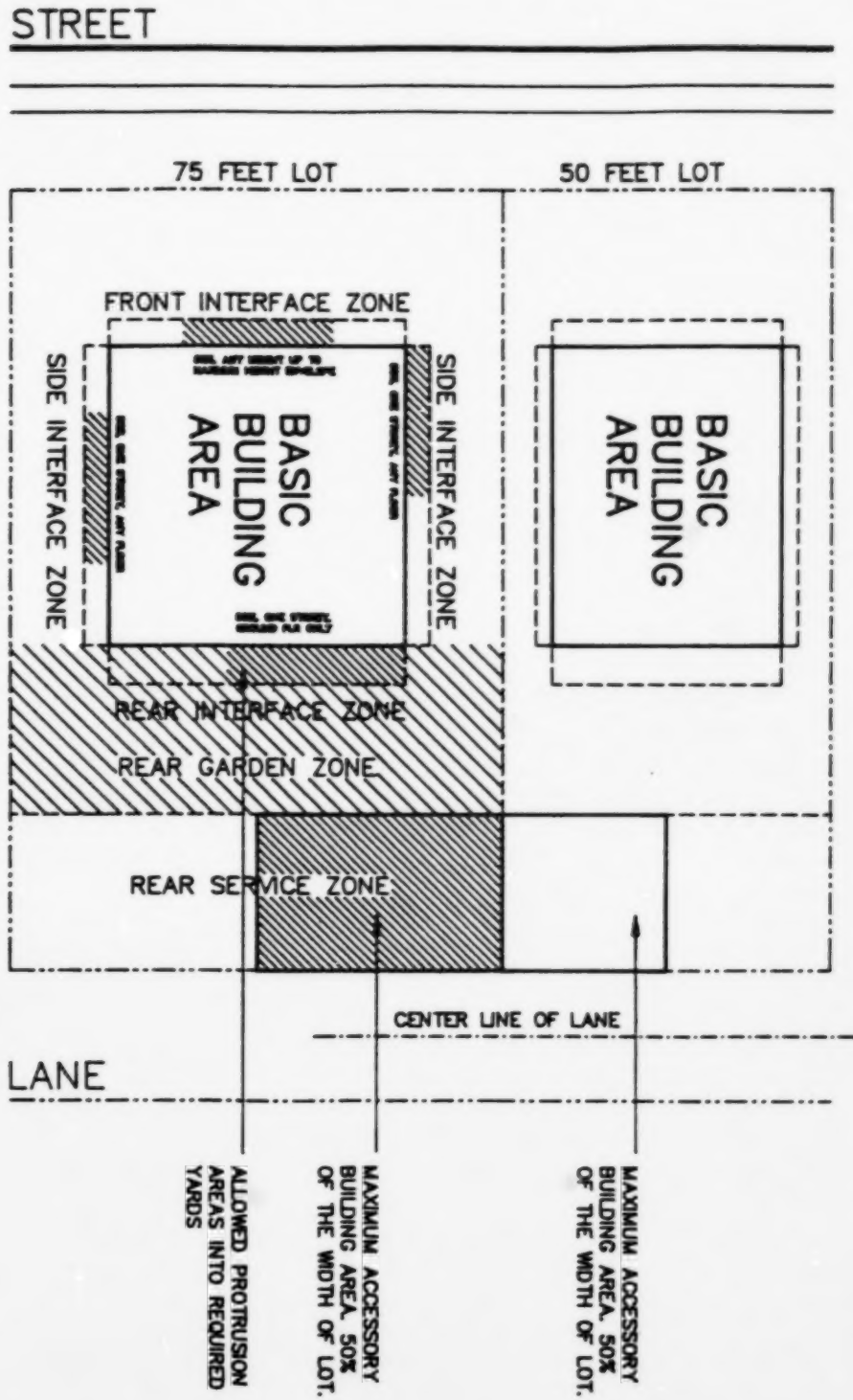
It is very clear from our studies that good schools attract families. Through the school system, neighbours develop a bond and a sense of neighbourhood participation. Often good schools are seen as being more important than parks.

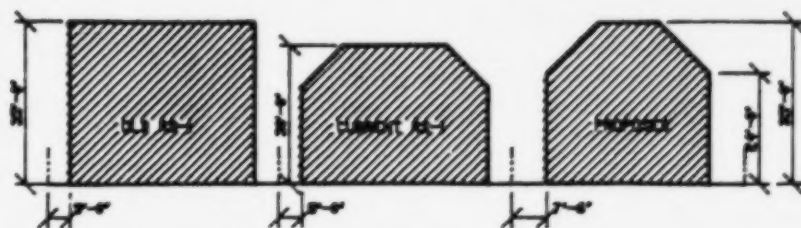
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APPENDIX "A": BASIC SETBACK DIAGRAM

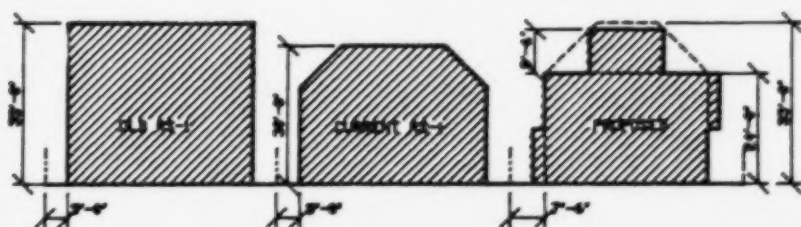


APPENDIX "B": INTERFACE ZONE DIAGRAM





MAXIMUM BASIC BUILDING ENVELOPES



MAXIMUM ENVELOPES WITH INTERFACE ZONES



POSSIBLE STREETSCAPE COMBINATION

APPENDIX 'C' HEIGHT DIAGRAMS

APPENDIX "D": COMPARITIVE DATA

	40' X 120'	50' X 120'	60' X 120'	75' X 120'	100' X 120'
LOT AREA	4800	6000	7320	9000	12000
F.S.R. ALLOWED (0.6)	2880	3600	4392	5400	7200
FRONT SETBACK (20%)	24'	24'	24'	24'	24'
SIDE SETBACK	10%	15%	17%	20%	20%
REAR SETBACK (50%)	50'	50'	50'	50'	50'
BASIC BUILDING AREA	1472	1610	1840	2070	3220
BASIC SITE COVERAGE	30.6%	26.8%	25.1%	23%	26.7%
MAXIMUM SITE COVERAGE	34.4%	32%	28.2%	25.8%	30.1%
MAX. F.S.R. ABPVE GD. ON TWO FLOORS	0.65	0.59	0.53	0.49	0.57